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DETERMINATION OF MECHANICAL PROPERTIES FOR MICROHARDNESS MAPPING IN A 5052 ALUMINUM ALLOY WELDED BY MIG PROCESS

Moreira, G.S.(1); Neto, J.C.M.(2); Silva, J.V.(2); Neto, J.E.(2); Ferro, K.H.P.(2); Freitas, B.M.(2); Guedes, A.E.D.S.(3); Sansone, J.L.(2); Rodrigues, R.A.(2); Barreda, E.R.(2); Kimura, S.P.R.(2); Escola Superior de Tecnologia da Universidade do Estado do Amazonas(1); Universidade do Estado do Amazonas(2); Universidade do Estado do Amazonas(3); Universidade do Estado do Amazonas(4); Universidade do Estado do Amazonas(5); Universidade do Estado do Amazonas(6); Universidade Federal do Rio Grande do Norte(7); Universidade do Estado do Amazonas(8); Universidade do Estado do Amazonas(9); Universidade do Estado do Amazonas(10); Universidade do Estado do Amazonas(11);

Aluminum alloys are widely used in shipbuilding, it is a material with good mechanical strength, high corrosion resistance and good conformation. Studies in the last decade, and in practically all over the globe, showed there was a greater participation of aluminum, making this the second most used material in the industry, behind only steel. Among a variety of aluminum alloys, stand out 5xxx, 6xxx and 7xxx, as these have been studied ostensibly due to relevant properties such as: high strength, formability, weldability, corrosion resistance and low cost. Another issue that deserves attention is the recycling of this metal. In this study we used the filler metal 5183, Chamfer angle 80°, Root opening 0,5mm, Stick-out 12 a 14mm, Voltage 23V, Torch 99,99%Ar, Transfer Type Pulsada, Electric current 220A, Wire Speed 30cm/min, Gas flow 25l/min. The aim of this study was to research the mechanical strength in a welded joint naval aluminum 5052 welded by Metal Inert Gas-MIG process using a mapping microhardness and software images. They were also carried out the tensile test, chemical analysis of the studied alloy and optical microscopy. The results of microhardness showed that the weld pool showed lower values. Optical microscopy showed that the weld pool had bubbles and the tensile test was presented fracture in the welded joint.